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## (54) METHOD FOR SELECTING AND REPRODUCING COMMERCIAL INFORMATION AND BROADCAST SYSTEM

### (57)Abstract:

PROBLEM TO BE SOLVED: To provide a more suitable commercial broadcast (CM) for each viewer and to allow a program and the CM to be corresponding to each other more directly by selecting the correspondence between the program and the CM among a plurality of candidates.

SOLUTION: A broadcast receiver has a storage section 106 in which CM programs are stored. A viewer registers its own preference of each CM by using a limit section 108. Only a signal which makes reference to a corresponding candidate for a CM is multiplexed a broadcasts program on the broadcast program and a receiver side selects a CM among the stored CM programs based on a reference signal and the preference of the viewer under the control of a reception control section 109 and a selection section 105 and the selected CM is inserted to the program. The information relating to the actually served CM is sent to a broadcast station by a selection information transmission section 107.

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## CLAIMS

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### [Claim(s)]

[Claim 1] In a commercial information selection reproducing method used with a broadcasting system containing a broadcasting receiver which receives and reproduces program information transmitted from a broadcasting station and this broadcasting station Commercial candidate information which specifies a commercial information candidate who should refer to it in the program information

for every program information is multiplexedLimitation information registered into said broadcasting receiver in order to restrict commercial information which transmits to said broadcasting receiver from said broadcasting stationand is reproduced with said broadcasting receiverBased on said commercial candidate information corresponding to program information selected with said broadcasting receiverA commercial information selection reproducing method choosing commercial information which should be reproduced out of commercial information beforehand accumulated in said broadcasting receiverand reproducing selected commercial information with said broadcasting receiver.

[Claim 2]Said broadcasting system has an upstream for carrying out information transmission to said broadcasting station from said broadcasting receiverThe commercial information selection reproducing method according to claim 1 transmitting commercial selection information which shows said selected commercial information to said broadcasting station from said broadcasting receiver using said upstream.

[Claim 3]Get down for signal transduction from said broadcasting station to said broadcasting receiverand said commercial information is transmitted to said broadcasting receiver from said broadcasting station at idle time of a circuitThe commercial information selection reproducing method according to claim 1 choosing commercial information which should be written in a rewritable information storing device formed in said broadcasting receiver according to said limitation information from said transmitted commercial information.

[Claim 4]The commercial information selection reproducing method according to claim 1wherein commercial information which said commercial information is stored on an information storage medium which can be readis distributed with said broadcasting receiverand should be reproduced out of commercial information on said information storage medium is chosen.

[Claim 5]In a commercial information selection reproducing method used with a broadcasting system containing a broadcasting receiver which receives and reproduces program information transmitted from a broadcasting station and this broadcasting stationTransmit program information to said broadcasting receiver from said broadcasting stationand time to which it was viewed and listened with said broadcasting receiver for every program information is accumulatedA commercial information selection reproducing method choosing commercial information corresponding to each program information from commercial information beforehand accumulated in said broadcasting receiverand reproducing according to a ratio of the accumulated time.

[Claim 6]From said broadcasting stationcommercial candidate information which specifies a commercial information candidate who should refer to it in the program information for every program information as said broadcasting receiver multiplexesand is transmittedLimitation information registered into said broadcasting receiver in order to restrict commercial information reproduced with said broadcasting receiverThe commercial information selection reproducing method according to claim 5 choosing commercial information which should be

reproduced out of commercial information beforehand accumulated in said broadcasting receiver based on said commercial candidate information corresponding to program information to which it was viewed and listened with said broadcasting receiver.

[Claim 7]In an included broadcasting systema broadcasting receiver which receives and reproduces program information transmitted from a broadcasting station and this broadcasting station said broadcasting stationCommercial candidate information which specifies a commercial information candidate who should refer to it in the program information for every program information is multiplexedFrom said broadcasting stationprovide a means to transmit to said broadcasting receiverand said broadcasting receiverA commercial information accumulation means which accumulates commercial informationand limitation information registered by user in order to restrict commercial information reproduced with said broadcasting receiverA means to choose commercial information which should be reproduced based on said commercial candidate information corresponding to program information selected with said broadcasting receiver out of commercial information accumulated in said commercial information accumulation meansA broadcasting system possessing a means to reproduce said selected commercial information with said broadcasting receiver.

[Claim 8]Have said broadcasting system at said broadcasting station from said broadcasting receiverand an upstream for carrying out information transmission said broadcasting receiverThe broadcasting system according to claim 7 providing further a means to transmit commercial selection information which shows said selected commercial information to said broadcasting station using said upstream.

[Claim 9]A means to get down for signal transduction from said broadcasting station to said broadcasting receiver from said broadcasting stationand to transmit said commercial information to said broadcasting receiver at idle time of a circuit is provided furtherSaid commercial information accumulation means is constituted so that rewriting is possibleand said broadcasting receiverThe broadcasting system according to claim 7 providing further a means to choose commercial information which should be written in said commercial information accumulation means according to said limitation information from said transmitted commercial information.

[Claim 10]Said commercial information storesand is distributed and said commercial information accumulation means is an information storage medium which can be read in said broadcasting receiver.

The broadcasting system according to claim 7wherein said broadcasting receiver chooses commercial information which should be reproduced out of commercial information on said information storage medium.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] Especially this invention relates to the commercial information selection reproducing method used by broadcasting systems such as CATV and a satellite broadcasting system which provided the upstream independently and the system of those about a commercial information selection reproducing method and a broadcasting system.

[0002]

[Description of the Prior Art] The development using these of application prospers by progress of video the digital code-ized technology of an audio and broadband network technology in recent years. The interactive video service represented by VoD (Video on Demand) is one of those which are examined as one of the applications of such. VoD is a system manipulatable free so that a receiver may require a video server like VTR by connecting the video server of the transmitting side and the set top box of a receiver with 1 to 1 by a circuit and sending a signal to the video server side from a set top box using an upstream.

[0003] Although the operativity is dramatically excellent in VoD if the utilizing method of the circuit for corresponding to this the throughput of the video server needed the quantity of the contents which should be supported etc. are taken into consideration the cost needed for service provision becomes large and we are anxious about the ability of a televiewer to receive service provision at a reasonable price.

[0004] On the other hand although the width and the operativity of selection of a program are restricted broadcast by the existing terrestrial waves satellite broadcasting and CATV can lower the cost for service including transmission greatly when a televiewer shares a circuit and contents. In these broadcasting systems when the sponsor of CM takes over a transmission cost and the cost to contents instead of a televiewer by introducing commercials (CM) the televiewer can receive [ reasonable cost ] service. In order to realize this in the present broadcasting system by the broadcasting station side CM was inserted in the program content and it has transmitted to it.

[0005]

[Problem to be solved by the invention] As mentioned above in order to receive service by broadcast of the present terrestrial broadcastings satellite broadcasting CATV etc. the cost which a televiewer pays is lowered by sharing contents with a circuit by many televiewers and introducing CM.

[0006] Since CM is a kind of merchandise information originally it should choose the televiewer who uses an object. However two features in the present broadcast mentioned above force that a televiewer also shares offer of CM and have become the demand to CM information of the televiewer of the result each with the situation to which it does not respond. If this demand is seen from a sponsor will also be the demand of wanting the televiewer who has an effect of CM more to see CM but. Under the present circumstances the resource spent there has the portion which is useless in a sense to CM to which the mismatch of the contents

of CM information and a televiewer's demand has happened. In order to reduce this futility it is devised so that it may be presumed that it more often sees from correlation with a time zone or the program content provided together and CM may be provided but this method expects strictly probable matching.

[0007] Although it should originally see from a sponsor and a remuneration of program offer must be compulsion of viewing and listening of CM ideally under the present circumstances changing a channel at time of CM is left to a televiewer's freedom and the contents of the program and the contents of CM to which it views and listens do not necessarily support 1 to 1.

[0008] This invention is made in view of such a point and is a thing.

It is enabling it to choose the purpose from two or more candidates and providing a commercial information selection reproducing method and a broadcasting system of more effective CM to which it can be viewed and listened.

[0009] This invention is not based on timing of channel switching by a televiewer but enables it to reproduce CM corresponding to a view program and an object of this invention is to provide a commercial information selection reproducing method and a broadcasting system which can connect CM to a program more directly.

[0010]

[Means for solving problem] In a commercial information selection reproducing method used with a broadcasting system containing a broadcasting receiver which receives and reproduces program information to which this invention is transmitted from a broadcasting station and this broadcasting station in order to solve SUBJECT mentioned above Commercial candidate information which carries out the plural specifications of the commercial information candidate who should refer to it in the program information for every program information is multiplexed Limitation information registered into said broadcasting receiver in order to restrict commercial information which transmits to said broadcasting receiver from said broadcasting station and is reproduced with said broadcasting receiver Based on said commercial candidate information corresponding to program information selected with said broadcasting receiver commercial information which should be reproduced out of commercial information beforehand accumulated in said broadcasting receiver is chosen and selected commercial information is reproduced with said broadcasting receiver.

[0011] In this commercial information selection reproducing method commercial information is beforehand accumulated in the broadcasting receiver side and from the broadcasting station side the commercial candidate information which carries out plural specifications multiplexes the commercial information candidate who should refer to it in that program information for every program information and it is transmitted. The commercial information inserted in program information is chosen based on the commercial candidate information corresponding to the program information to which it is viewed and listened and the limitation information beforehand registered by the televiewer etc. It will be viewed and listened to

advertisement of the goods etc. which suited the televiewer's taste in the candidate of shoes who wants to be specified by commercial candidate information. Therefore though it is a broadcasting system which shares the same circuit by two or more members different suitable commercial information for every televiewer can be provided where the relation between a program content and commercials is held.

[0012] In this case until reproduction of that commercial information is completed to the insertion time of commercial information it is preferred to constitute so that insertion of commercial information may be made into the conditions of program information reproduction by providing the function to forbid a channel change, i.e. the change of program information in the receiver end.

[0013] It becomes possible to grasp the offer situation of commercial information by the broadcasting station side by transmitting the commercial selection information which shows the selected commercial information to a broadcasting station from a broadcasting receiver using an upstream.

[0014] It can be made to accumulate in the broadcasting receiver side about commercial information by night's etc. getting down for example transmitting to a broadcasting receiver from a broadcasting station at idle time of a circuit and writing in a rewritable information storing device in which it was provided by broadcasting receiver. Thereby commercial information can be easily updated now and it becomes possible to store up the newest commercial information in the transmitter-receiver side. It is preferred to choose beforehand commercial information which should be written in an information storing device in this case according to limitation information from transmitted commercial information. Thereby a storage capacity of an information storing device can be saved.

[0015] It is also possible to read commercial information from the information storage medium selectively and to reproduce using information storage media by which commercial information was accumulated such as CD-ROM and DVD.

[0016] In a commercial information selection reproducing method used with a broadcasting system with which this invention contains a broadcasting receiver which receives and reproduces program information transmitted from a broadcasting station and this broadcasting station transmits program information to said broadcasting receiver from said broadcasting station and time to which it was viewed and listened with said broadcasting receiver for every program information is accumulated. According to a ratio of the accumulated time commercial information corresponding to each program information is chosen from commercial information beforehand accumulated in said broadcasting receiver and it reproduces.

[0017] In this commercial information selection reproducing method CM information corresponding according to a ratio of time is chosen -- CM information which corresponds if fixed time where time which viewed and listened to each program information is accumulated for example which has accumulated time is exceeded is inserted. Therefore even if it is a case where one channel after another was changed and a televiewer tried to gather various programs and does them only time

[ CM / corresponding to a program to which it viewed and listened ] (or CM number according to viewing time) according to the viewing time is reproduced. Therefore it is not based on timing of channel switching by a televiewer but CM corresponding to a view program can be reproduced now and it becomes possible to connect CM to a program more directly.

[0018] Also in this case until reproduction of that commercial information is completed to insertion time of commercial information it is preferred to constitute so that insertion of commercial information may be made into conditions of program information reproduction by providing a function to forbid a channel change i.e. a change of program information in a receiver end.

[0019]

[Mode for carrying out the invention] Hereafter an embodiment of this invention is described with reference to Drawings. Drawing 1 is a block diagram showing composition of a broadcasting system concerning a 1st embodiment of this invention. This broadcasting system is an interactive system which shared many contents with a circuit among televiewers for example like digital CATV and was provided with an upstream from the addressee side to the broadcasting station side.

[0020] It is a thin upstream to get down and for a circuit and the circuit 114 collect information from a broadcasting receiver in the circuit 113 being thick at drawing 1 for transmitting a program and right-hand side of a circuit is a broadcasting station and left-hand side is a broadcasting receiver.

[0021] At a broadcasting station multiplex [ of two or more programs ] is carried out in the multiplex section 101. Under the present circumstances multiplex [ of the CM information corresponding to a program for specifying corresponding CM information candidate ] is carried out to each program for every program. Specifically an MPEG 2 System standard (ISO/IEC 13818-1) which is international standards of ISO/IEC is often used for the program multiplex of digital broadcasting for example. TS (Transport Stream) of MPEG 2 System is the packet multiplex mode which used 188 bytes of fixed length packet. PID (Packet ID) is attached to each media (an audio/video data) contained in each program respectively. Correspondence with a program and PID of media is shown by the tables PAT (Program Association Table) and PMT (Program Map Table) showing correspondence.

[0022] CM information corresponding to a program can also carry out multiplex as data and it is also possible to describe as private data in an audio or packet streams of media of video. Since PID and resources of demultiplexing and a zone are consumed fixed also about data for CM information corresponding to a program in the case of the former latter one is rather preferred. Below it explains taking the case of a case where the latter is used.

[0023] In this embodiment since [ which gets down and aims at effective use of the circuit 113 etc. ] many receiving televiewers \*\*\*\*\* the CM information itself is not multiplexed and sent to a program Only information for specifying CM information candidate who should be reincarnated out of CM information beforehand

accumulated in a broadcasting receiver or specifying the insertion time etc. is multiplexed and sent to a program corresponding as CM information corresponding to the above-mentioned program. In consideration of a thing when CM selection taste of a terminal which does not support CM selection reproducing method of this embodiment or a user does not hit at all in CM specified by a program default CM may be inserted also in a program as usual. In this case although CM information which should be reproduced out of CM information fundamentally accumulated in default broadcasting receiver instead of CM beforehand is chosen in a broadcasting receiver of this embodiment default CM may be reproduced when there is no CM information suitable in accumulated CM information.

[0024] As an example of a format of the above-mentioned program matching information insertion start time of CM finish time (STC counter value of a program corresponding respectively) choice information that specifies a candidate of CM to reproduce its priority etc. can be considered as a component. Although it needs to be described by packet reproduced at time earlier than insertion start time and finish time which were described with CM information corresponding to this program being natural there In order to take correspondence with program viewing time and CM with time more sufficient accuracy it is desirable to see in time after reproduction and to insert periodically by a TS packet of a program (for example 1 etc. time per 30 second etc.).

[0025] A multiplexed program is sent to a broadcasting receiver via the transmitting interface 102. In a broadcasting receiver broadcast is received by the reception interface / separation part 103 and a program to watch out of a multiplexed program is chosen based on a channel switching signal generated according to a televiewer's channel selection operation. In the case of typical digital CATV this portion is constituted by selecting part + digital demodulation equipment + MPEG 2 System decoder of a frequency channel. If a program is chosen here CM information corresponding to a program corresponding to a selected program will be decoded and it will be sent to the reception control part 109. A counter value of STC (System Time Clock) established as a clock for PCR (Program Clock Reference) contained in TS to recover an operation clock of the transmitting side It is sent to the reception control part 109 the storage device 106 etc.

[0026] The reception control part 109 performs insertion of CM motion control of other functional block etc. A program selected by the reception interface / separation part 103 is sent and played by the display device 110 (a decoder of an audio and video is included) through the CM insert portion 104. If it detects that an inputted STC counter value became near the insertion start time described by CM information corresponding to a program the reception control part 109 will send CM information corresponding to a program accumulated by the point in time to the selecting part 105. The selecting part 105 chooses CM information applicable out of CM information accumulated in the storage device 106 based on CM information corresponding to a program and transmits the information to the CM insert portion 104 from the storage device 106. Since there are some televiewers



who change one channel after another when choosing heretry to gather various programs and do themhe accumulates time which viewed and listened to each programand is trying to choose CM corresponding according to a ratio of time in this embodiment. When time which should insert CM according to a program has shiftedCM inserts by channel switchingand although there is no lossas it is not generatedeven if it is program timecompulsory CM insertion may be needed. In this casethe reception control part 109 sends a control signal to the CM insert portion 104and inserts CM compulsorily. Thus the reception control part 109 manages conditions about CM insertionand serves to control. The reception control part 109 has managed starting timing of the actual storage device 106.

[0027]The selecting part 105 sends CM selection information about selected CM to the selection information transmission part 107. The reception control part 109 sends a control signal to the CM insert portion 104and the reception interface / separation part 103 to the same timing as starting of the storage device 106. This control signal is receiveda reception interface / separation part 103 stops registration of channel switchingand the CM insert portion 104 inserts CM in an output by changing an input to the storage device 106 side. If insertion finish time comes similarlythe reception control part 109 sends a control signal to the selecting part 105the CM insert portion 104and the reception interface / separation part 103therebya reception interface / separation part 103 will resume registration of channel switchingand the storage device 106 will suspend operation.

[0028]Since a transmission band shares the upstream 114 by many viewers narrowly with a typical digital CATV system about transmission of selection information in many casesIn such a caseselection information is good to once be stored in the selection information transmission part 107and to make it individually sent to the broadcasting station side via the transmitting interface 111 by polling from a broadcasting station.

[0029]In the broadcasting station sideby totaling selection information which gatheredoffer actual results data of CM can be created and CM offer contract can be performed with a sponsor based on this data.

[0030]Nextwith reference to a flow chart of drawing 2procedure which chooses CM information corresponding according to a ratio of time mentioned above is explained. Control of a procedure of this selection process is performed by the reception control part 109.

[0031]In a control algorithmthe counter  $x_n$  which counts the number of times which received CM information corresponding to a program for every channeland the register  $r_n$  in which PCRon information is stored are used.  $n$  is a variable which shows a channel designator hereand a channel number is  $N$  ( $n=1-N$ ).

[0032]A start of viewing and listening will reset each counter  $x_n$  and each register  $r_n$  first (Step S11). Supposing it chooses the channel  $n_x$ when  $n_x$  is substituted for the variable  $n$  (Step S12) and CM information corresponding to a program of the channel is receivedcount up the counter  $x_n$  corresponding to the channel +1and. A value of PCRon is set in the corresponding register  $r_n$  (Step S13). HerePCRon is time stamp PCR (Program Clock Reference) contained in CM information

corresponding to a program in order to specify CM change time.

[0033] Thus the value of the counter corresponding to the selected channel is counted up to the degree of reception of CM information corresponding to a program and the value of PCR<sub>on</sub> of the register corresponding to the selected channel is updated.

[0034] It is judged whether the counter  $x_{ny}$  is larger than the threshold  $th$  in the time specified with the value of PCR<sub>on</sub> (for example referred to as PCR<sub>on</sub> of the channel  $n_y$ ) which is in PCR<sub>on</sub> of each register coming (Step S15). (Step S14) When large it means viewing and listening to the channel  $n_y$  more than time to fulfill CM insertion conditions and CM corresponding to the channel  $n_y$  is chosen and inserted (Step S16). In being small it is considered as what has the viewing time shorter than CM insertion conditions and CM does not insert at this time. In any case a corresponding counter is cleared and it returns to a receive state.

[0035] Except PCR<sub>on</sub> time the judgment of whether there is any channel switching demand is performed (Step S17). If it changes at this time and there is a demand processing corresponding to Step S12 will be performed here and that change demand will be received (Step S18).

[0036] The value of  $th$  determines CM insertion conditions. For example if CM information corresponding to a program shall be inserted once in 30 seconds as mentioned above and it will be referred to as  $th=4$  and it views and listens for example to 2 minutes in a 30-minute program the conditions in which CM is inserted will be fulfilled. Usually since two or more CMs per program are inserted they are good to set up the value of  $th$  gradually. For example by choosing and inserting one CM when the value of the counter  $x_{ny}$  is less than [ 4 or more ] 20 choosing and inserting two at the 20 or more times of less than 40 and carrying out like --Only the time (number) according to the value of the corresponding counter i.e. the ratio of time to which it was viewed and listened can insert CM information corresponding to the program.

[0037] Even if it supposes that it has a counter for every CM id and viewing and listening is completed it may decide to carry over the value of each counter next time. Next it explains per operation when accumulating CM information in the storage device 106. In this embodiment it assumes fundamentally performing transmission of CM information in the dead of night which is not performing program broadcast. The contents of the video of CM and audio and data are passed to the multiplex section 101 at a broadcasting station at this time that got down and as for which the circuit 113 is vacant. Multiplex [ in this case ] is not multiplex [ of a No. two or more group usually like a program ] but is multiplex [ as a stream made so that random access could be carried out from a start position for every CM as much CM is serially located in a line with one stream ]. Since this stream does not have to carry out real time reproduction by a receiver it may be made to transmit the whole relation of the TS packet of MPEG 2 System as data. It may be made the form of PS (Program Stream) packet of MPEG 2 System which a storage medium may be sufficient as and is used. It carries out multiplex [ of the CM identification information for identifying the sponsor and the contents of each

CM by a keyword etc. ] to this data. Data is sent to a broadcasting receiver via the transmitting interface 102 and the going-down circuit 113.

[0038]The reception interface / separation part 103 is auto-answered a signal which shows CM transmission is received and a required portion of a broadcasting receiver starts operation automatically. Since this data includes only one program the whole is sent to the limiting part 108. The limiting part 108 inputs limitation information united with a televiewer's taste a priori selects it out of CM by which CM which should newly be accumulated from CM identification information by which multiplex is carried out has been sent to this and sent CM and is accumulated in the accumulating part 106. Family structure ages etc. are inputted for example it may be made for the limiting part 108 to guess a required commodity classification from these information as limitation information and a televiewer may be made to do the direct entry of the commodity classification etc. which do not need information more directly.

[0039]It may be made to provide a choice to which some televiewers also perform a cost burden instead of restricting strongly by not getting a sponsor paying all costs by the method of this input. Since it is also considered by time zone that televiewers differ even if it is the same broadcast receiving set it may enable it to set up limitation information flexibly for every time zone and day of the week. Since CM identification information on selected CM is used for access control of the storage device 106 it is written in the storage device 106 as a table for access control.

[0040]Since capacity of the accumulating part 106 is limited old CM will be overwritten when new CM is written in. The limiting part 108 manages also about this per [ which should look at and erase CM information ] CM. For example it is overwriting sequentially from old information etc. All CMs are good to code so that it is considered as the length of an integral multiple of the same reproducing time and length on a stream may also determine the maximum per unit reproducing time and may turn into below the length so that other CMs may not be affected by overwrite. As for generally CM making image quality lower than a program contents since it is hard to approve it is more desirable than the bit rate of a program to set up the bit rate of CM highly. Thus it is transmitted to night and CM chosen [ was restricted and ] and accumulated is inserted in a program and a televiewer is provided with it.

[0041]Next with reference to drawing 3 it arranges about a relation of three information relevant to CM used by the above-mentioned explanation. Three information is three CM information corresponding to a program by which multiplex is carried out to a program CM identification information given at the time of CM information transmission and CM selection information.

[0042]In this as for CM identification information since filtering is performed by this information and limitation information it is desirable to contain many things equivalent to a keyword for restriction. A thing like CM id is prepared first and each CM enables it to specify it as a meaning by id as an example as shown in drawing 3 (A). CM id is taken as sponsor id and id made by CM number. Time

(duration time) which reproduction of each CM otherwise takes in a form of an integral multiple of unit time (for example 15 seconds). Updated time (this is filled in when recording on a storage device) a commodity classification code a trade name the selling price the characteristics (the bit rate a code amount etc.) of a keyword (plurality) and a stream showing the contents of CM etc. can be considered.

[0043] As CM information corresponding to a program is information used for control of change timing of CM and selection of CM from this and limitation information and it is shown in drawing 3 (B) It is constituted by change PCR (Program Clock Reference) a sponsor CM id and list that consists of a group of a priority. A sponsor's priority is decided by interest of program offer for example and a priority of CM id is usually decided by a sponsor's advertising strategy. In filtering CM which should be reproduced using CM information corresponding to such a program First CM information in which CM id belonging to the sponsor id of the priority 1 has CM id with CM id of CM identification information where is attached and doubling is performed and which is in agreement in order of the priority is chosen in order. Subsequently the processing same in order of a priority is performed about other sponsors id belonging to same change PCR. An offer history of CM is also made to reflect in filtering.

[0044] Only CM id and its selection frequency of CM as which CM selection information was chosen fundamentally. Next the 2nd enforcement type of this invention is explained using drawing 4.

[0045] This embodiment is provided by storage media such as DVD (Digital Versatile Disc) without transmitting if it goes via a circuit about CM unlike Embodiment 1 of drawing 1. In this case renewal of CM is performed by exchange of a storage medium: Operation of a great portion of block is the same as that of drawing 1 and only a portion from which operation differs is explained.

[0046] According to this Embodiment 2 it becomes a precondition of operation of the broadcasting receiver that storage media such as DVD are first inserted in a broadcast receiving set. For this reason a storage medium is inserted and the storage device 106 will send a signal which shows that to the reception control part 109 if that medium checks that it is the right medium by which CM was accumulated. The reception control part 109 of a point which manages insertion timing of CM and controls operation of a reception interface / separation part 103 or the CM insert portion 104 is the same as that of Embodiment 1 of drawing 1. Since all CM information before being restricted to a storage medium is accumulated it is required that storage capacitance of a storage medium should be larger than Embodiment 1 of drawing 1. What the limiting part 108 accumulates limitation information and provides the selecting part 105 with it and CM is chosen like [ at the time of Embodiment 1 ] and controls accumulation is not needed. Based on CM information corresponding to a program from the reception control part 109 and control information from the control section 108 in CM information which agrees at restriction the selecting part 105 chooses CM information with CM id specified using CM information corresponding to a program and transmits it to

the CM insert portion 104 from the storage device 106. Since it is a storage medium multiplex system here is usually PS packet of MPEG 2 System. It may be made for information transmitted from the selection information transmission part 107 to send not only CM selection information but limitation information from the limiting part 108 as shown in drawing 4. A merit that a track record hope of CM offer can be built now by bringing limitation information together in the broadcasting station side a priori and totaling is obtained.

[0047] An example which does not associate CM and a program can be considered as another embodiment. He intends not to sponsor a program but for a sponsor of CM to provide the whole service from a certain broadcasting station. In this case it will be taken as a relation with a broadcasting station correspondence with CM provides service rather than is taken between programs and selection of CM will also be performed based on that information. When having received service only from one broadcasting station like CATV closed in the area information including choice information for CM selection included in CM information corresponding to a program CM insertion timing etc. will be treated in common about all the programs.

[0048] Next timing of a change of a program and CM is explained using drawing 5. Drawing 5 is the block diagram which described composition of a portion related to timing of a change in details more in a block diagram of drawing 1 or drawing 3. By this drawing 5 after CM is chosen only a required functional block and a signal are described. What set the separation part 401 of drawing 5 FIFO 402 and the storage device 406 supports the storage device 106 of drawing 1 or drawing 4.

[0049] The separation part 403 is the isolation of drawing 1 and the reception interface / separation part 103 of drawing 3 and usually constitutes a TS decoder of MPEG 2 System from drawing 5 together with STC 405. In MPEG 2 System there is a function which reproduces a clock of the transmitting side by a receiver as mentioned above buffer management is performed using a recovered clock and a synchronization between media is taken. STC (System Time Clock) 405 is a counter which performs clock recovery. This counter value is sent to the reception control part 109 and is used as a time standard for a change while being used as an operation clock by the separation part 401 FIFO 402 and the audio video decoder 407.

[0050] In the separation part 103 as already explained CM information corresponding to a program is separated and it is sent to the reception control part 109 but in this the information directly related to a change is changed and is PCR on/off information. The counter value showing the change timing of CM start which changed and measured PCR on by STC as mentioned above and PCR off are counter values which express the change timing of the end of CM similarly. The reception control part 109 controls operation of the CM insert portion 104 the storage device 406 FIFO 402 and the separation part 401 by a control signal. First the STC counter value is compared with PCR on if both become a near value the storage device 406 will be started and read-out of CM with the selected selecting part 105 is started. Since the random access of the storage device 406 generally takes some time sufficient quantity to guarantee delay is predicted and it

prefetches to FIFO402. When an STC counter value and PCR on are in agreement read-out of FIFO402 is started operation of the separation part 401 is changed to a start and the CM insert portion 104 is changed to the CM side.

[0051] The reception control part 109 supervises the occupation of FIFO402 and if an occupation decreases it will read the data of a continuation of CM into FIFO402 again. What is necessary is to process only to the last CM among a series of CMs in order for a stream to continue into FIFO402 and to enter since processing to PCR on of following CM is performed when CM continues to PCR off. This processing changes the CM insert portion 104 to the program side and is the separation part 401 FIFO402 and processing that suspends operation of the storage device 406. The separation part 401 is an MPEG 2 System PS decoder typically. Usually although PS decoder reproduces a clock by itself and operates with the clock he is trying to always operate the whole system with the clock of a program here since it may change when the operation clock of the decoder 407 of the display device 110 is changed and operation may sometimes become discontinuity for a moment. Under the present circumstances recovery of STC may produce an error by the jitter of a circuit and since it is coded with a slightly different clock from a program few time lags may produce CM in connection of a change. For this reason about the portion (CM insert portion of a program stream and the start of CM an end portion) which a change may produce it protects by stuffing which does not affect decoding and as for an audio it is desirable to carry out mute.

[0052] Although the above explanation explained as what performs a change on video and the coding stream (PES; Packetized Elementary Stream) level of an audio it may carry out with the video after decoding and an audio level and in [ the case like VoD ] an MPEG 2 System stream level may perform in the program of the multiplex system of only one program. However the change with a System stream level needs to change PID for CM stream and it is necessary to perform management of time on the outside of the structure of System. Video and an audio decoder may be needed for the change after decoding also at the storage device side and the connection section at the time of a change may become somewhat unnatural. When it changes on a PES level the storage device 406 Based on the STC counter value received from STC405 it is necessary to rewrite PTS (Presentation Time Stamp) and DTS (Decoding Time Stamp) which are the time stamps used by decoding.

[0053] Although MPEG 2 System was used as an example of realization in the form near the present broadcast and the severe circuit of quality (QoS) conditions was assumed in the above explanation it seems that application to broadcast by the circuit that QoS is not necessarily guaranteed like the Internet is also possible for this invention and the demand about timing becomes looser in such a case.

[0054] With a broadcasting system although especially the selection reproduction technique of CM explained by these Embodiments 1 and 2 is effective the side which receives the information can apply it also to systems such as VoD corresponding to 1 to 1 the offer-of-information side.

[0055]

[Effect of the Invention]As explained aboveaccording to this inventioncommercial information which is different for every televiwer in accordance with a televiwer's taste can be provided nowandtherebythe donor of commercial information can expect now the effect of offer of the commercial information more directly. The information about the recovery status of commercial information can be efficiently collected now exactly. It is not based on the timing of the channel switching by a televiwerbut CM corresponding to a view program can be reproduced nowand it becomes possible to connect CM to a program more directly. Effective use of a circuit can be aimed at by not sending commercial information in real time as a secondary effect. In the meaning of effective use of a circuitthe effect that commercial information is renewable by high definition rather than the usual program information is also included.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1]The block diagram showing the composition of the broadcasting system concerning a 1st embodiment of this invention.

[Drawing 2]The flow chart which shows the procedure of CM information selection process according to the program viewing time performed with the broadcasting receiver used with the broadcasting system of the 1st embodiment.

[Drawing 3]The figure showing the example of a format of CM pertinent information used with the broadcasting system of the 1st embodiment.

[Drawing 4]The block diagram showing the composition of the broadcasting system concerning a 2nd embodiment of this invention.

[Drawing 5]The block diagram showing the concrete example of composition for explaining the change of CM and a program in the system of drawing 1 and drawing 4.

[Explanations of letters or numerals]

101 -- A multiplex section102111 -- A transmitting interface103303 -- A reception interface / separation part104 [ -- A selection information transmission part108 / -- A limiting part109 / -- A reception control part110 / -- A display112 / -- A reception interface113 / -- It gets down and is a circuit and 114. / -- Upstream. ] -- CM insert portion105 -- A selecting part106.-- An accumulating part107

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